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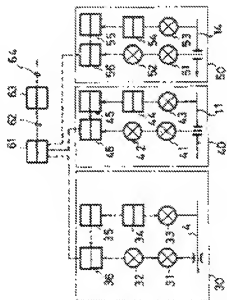
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(54) LEAK DETECTOR FOR NUCLEAR REACTOR COOLANT PURIFICATION SYSTEM

(57)Abstract:

PURPOSE: To accurately measure the flow rate in each operation mode and obtain the amount of leakage, by adding a temperature compensating means to the leak detection of a nuclear reactor purification system.

CONSTITUTION: A leak detector is constituted by a system inlet-side flow rate detecting section 30 and system outlet-side flow rate detecting sections 40, 50 which are provided to each of pipings in the purification system. The flow rate detecting sections are constituted by flow rate detectors 31, 41 and 51, transmitting units 32, 42 and 52, temperature detectors 33, 43 and 53, converters 34, 44 and 54, density calculating units 35, 45 and 55, and compensating calculating units 36, 46 and 56 having functions to carry out multiplication and division for obtaining mass flow rates, thereby to obtain mass flow rates in consideration of the temperatures at various portions of the pipings. The mass flow rates obtained by the flow rate detecting units 30, 40 and 50 are subjected to a subtraction, the system inlet-side flow rate minus the system outlet-side flow rate, in an addition-subtraction calculating unit 61 to deliver a flow rate difference signal 62 to an alarm setting device 63, where the signal 62 is compared with a predetermined value. When the flow rate difference signal is larger than the latter, a trip signal 64 is transmitted.



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